BIOGRAPHICAL SUMMARY: Carol Araki Wyban

"Well, fish ponds are living cultural treasures. I see them as important springboards for education, because they give us the opportunity to explore the way Hawaiians used the land and water. They're multi-faceted experiences, because there's things going on in the fish pond, in the ecosystem, and Hawaiians were very knowledgeable about fish and fish behavior and fish growth. That's evidenced by all the many words they had for fish. They had seven different classifications for mullet, which is more sophisticated than the fisheries (terminology) today."

Carol Araki Wyban was born September 19, 1950 in Mānoa Valley, O'ahu. Her family later moved to Kaimukī, where she spent much of her childhood. She attended public schools in Honolulu and graduated from Kalani High School in 1968.

After graduating from the University of Hawai'i at Mānoa in Psychology, she studied art and dance. She married James Wyban, an aquaculturist with a Ph.D. in Zoology. Together they leased Lokoea Fishpond in Hale'iwa, O'ahu. For four years, 1981 to 1985, they farmed Lokoea: stocking and feeding fish, maintaining the fish pond, removing predators and undesirable fish, and marketing their harvests. Through their hard work and perseverance, they were able to make their living off the pond. In 1985, when the Wybans' lease of Lokoea was ending, James took a position with Oceanic Institute.

Because of their fish-farming experience, the Wybans have been serving as technical advisors to Hui o Kuapā as the *hui* attempts to restore 'Ualapu'e Fishpond for aquaculture development.

Carol and James live in Hawai'i-kai, O'ahu.

Tape No. 19-27-1-91

ORAL HISTORY INTERVIEW

with

Carol Araki Wyban (CW)

May 16, 1991

Hawai'i Kai, O'ahu

BY: Warren Nishimoto (WN)

WN: This is an interview with Carol Araki Wyban on May 16, 1991, at her home in Hawai'i Kai, and the interviewer is Warren Nishimoto.

Okay, let's begin, Carol. First, tell me where you grew up, little bit about your background.

CW: Okay, I was born on September 19, 1950. I grew up—my early years—in Mānoa Valley, in the back of the valley. It was a Japanese farm community, and they grew gardenias and taro and vegetables. Sort of a small, very small, community where everybody knew each other. And when I was six, we all had to move because the land was being developed and our leases were ending and so we all had to leave that area and my parents moved to Kaimukī. So I spent the remainder of my years growing up in Kaimukī.

WN: Were your parents involved in agriculture?

CW: No, they weren't. They both had jobs in town. My grandfather did sort of backyard farming. Chickens and vegetables and. . . . My neighbors were farmers. So, it was a really pleasant sort of community. You knew everybody and everybody knew you, and (it was) very friendly, and once a year everybody would have a New Year's party and be very celebrative. Everybody would get together and cook food and they'd have people performing. Some women in kimono would be dancing with umbrellas and fans and it was (an ideal) childhood.

WN: Mostly Japanese?

CW: All Japanese. In fact, when I was little, I didn't know that the world wasn't Japanese. I thought everybody in the world was Japanese when I was growing up.

My parents still belong to a club called the North Mānoa Farmers Association. They've remained in touch with each other and stayed pretty close. They are aware of the goings-on in each others' families. It was that close-knit, that they've still kept relating to each other over thirty years later.

WN: And when you moved to Kaimukī, was it more or less the same kind of community, or . . .

CW: No, that was more city life, very much city life. Although we lived on a little street in Kaimukī. And we knew everybody on that street very well and knew all the different families. But it was city life and it was really different. And Kaimukī's a different environment, it was hot and dry compared to how green and lush Mānoa was. So, (it was a) different kind of lifestyle.

WN: What about your education?

CW: I went to Mānoa Elementary, then to Liholiho Elementary, then to Kaimukī Intermediate, and then Kalani High School and the University of Hawai'i.

WN: What did you major in?

CW: Psychology. And later on, I went back to study art and dance.

WN: Far cry from fish farming.

CW: (Laughs) Well, you know, people always ask me how it is that I got into ancient Hawaiian fish ponds, and I always say, "You have to be careful who you marry," because that is what happened. I married an aquaculturist and it took me into fish farms and it sort of stuck. I see it consistent with what I did in studying human relations, because I rely a lot on interpersonal communications and understanding people in the work I do now. And, in my writing and my artwork, the fish ponds have been a really good vehicle for those things to emerge. So, it's a nice blending of things. It sounds inconsistent, but it all works in my life.

WN: So, when you met Jim [Wyban], you had no idea about fish ponds or anything like that.

CW: No, but I had that love of growing food from my early years and I (enjoyed my) backyard garden. And so, it didn't seem inconsistent with what I wanted, being out in nature, growing food, and living a country lifestyle. It's funny, because when (Jim) graduated with his Ph.D., our long-term goal was to have a fish farm, or an aquaculture farm, when we retired. And instead of how we had planned it, it turned out the other way around. We started right off with the aquaculture farm.

WN: Well, let's talk about that. This is Lokoea Fishpond?

CW: Yes, uh huh.

WN: Okay, why don't we get started on how you got involved in that.

CW: (There were no job opportunities in Hawai'i, so) we put an ad in the paper and it said (chuckles), "Ph.D. with family seeks aquaculture opportunity," and it had our phone number. And we just received one phone call and it was for Lokoea.

WN: Who was that?

CW: It was Lee Martin. He was a Hale'iwa businessman and he also had Sea Flight and the Sherry Waikīkī—a time-share condominium—Lokoea was (part of) a master lease from Bishop

Estate. He was operating it more as a cash flow from the rentals of the houses around the fish pond. He wasn't using the fish pond actively, but the fish pond was something he saw (as) future potential in terms of doing *lū'au*s or something. Somehow, he wanted to incorporate the fish pond into something big.

WN: As a fish pond?

CW: No, not necess— . . .

WN: Or as a body of water?

CW: (Yes), as a body of water, whether to build luxury homes around it, or (as a marina). He had plans for the pond that he was trying to manifest, but maintaining it was a problem to him. So, in a way, our coming on board was helping him, because he didn't have to hire someone to maintain the fish pond and the grounds just as a caretaker, you know, pulling grass around the edges and things like that. We paid him for that right to do that work and to get the pond going again. So, it worked really well for him. In the long range it worked well for us, although it wasn't an easy time at all.

WN: What was tough about it?

CW: Everything. (Laughs) Everything was tough about it. It's really easy to romanticize a lifestyle of a farmer, especially a farmer at an ancient Hawaiian fish pond. It's so beautiful—the site is so beautiful, it's really an idyllic thing. And people would romanticize a lot about how they thought our life must be when they visited us. But, you know, it was really physically arduous. There was a lot of backbreaking work involved in getting the fish pond works happening. Pulling of grass along the edges. Getting rid of all the old stock of fish—there were thousands and thousands of pounds of ragged, old tilapia that were just old and unsalable and diseased. So, a lot of our early efforts were spent just harvesting those fish and getting rid of them. So we just put a tremendous amount of effort in the first few months doing that, before we could even stock it. Then we stocked it with new fry and added feed inputs and got the pond going. And in the first year we started harvesting fish and selling it, although the fish weren't of really high quality at that time.

WN: What kind of fish mostly?

CW: In the beginning, we had some salable tilapia, not much, some *āholehole*, and some mullet. But, (as) I said, they weren't really high-quality fish, they were kind of skinny because they weren't fed, and the pond was so choked with tilapia.

We started putting feed inputs and at first we didn't have the funds to put grains and feeds in, so we relied on *okara*, which is a by-product of [tofu, from] the tofu factory. It's incomplete protein, but it was a good start for feed inputs. We started with that and then we talked to scientists from all around the world. Jim not only reviewed literature of aquaculture around the world, but we had a lot of visitors come by who heard about what we were doing. Visitors from China and Israel and Japan. And one of the visitors from Israel was talking to us about a polyculture system that they were developing based on the Chinese polyculture system, which is incredibly productive. His name was Gideon Hulata. Gideon said that they

found that the absolute best feed input they had was chicken manure, because the manure contained a lot of partially-digested grains. When the chicken eats grains, it can't digest it all, a lot of it just partially digests and passes through. The rest of the manure sort of serves as fertilizer. So, they found that those inputs into the fish pond were tremendously productive, and so he suggested that we try that.

So, we bought four-ton truckloads of manure and started inputting it. And we found that he was right. As soon as we throw the manure in, the ducks would come up and feed on the grains. So, we knew that there was good food in there. And then as the manure hit the water and the sunlight hit the fertilizer, all this plankton growth would start up, the zooplankton. And so it was very healthy food for the fish. Eventually, we stopped doing the *okara*, and we did chicken manure and prawn pellets, from Waldron's feed [i.e., Fred Waldron, Ltd.], and that was a really good balance of food for the pond. (Another aquaculturist), Ron Zweig came by. (He) had spent nine months in China, studying their (aquaculture) system. He looked at our pond's water quality and said it was very similar to that golden fresh brown that the Chinese aquaculturists aim towards.

The reason why I say it was physically arduous is because you spend a lot of time hauling things around. You're hauling the feed inputs, the manure inputs, into the pond. You're hauling nets around to catch fish. You're hauling fish up to the barn to ice down. You're hauling ice. You ice the fish, you haul the fish to market. It's just a lot of physical labor. A lot of strain on the back.

WN: What about the walls? Was it intact?

CW: The walls were in pretty good shape, except at certain times you'd walk along the pond wall and fall into a hole, and you'd have to go back and fill it up with rock and sand and dirt, and fix the hole. During winter, the North Shore surf that's famous for surfing, would be huge, and it would come up the estuary and tear away portions of the wall, so you'd have to repair that. And, also, the surf would bring in tons of sand, and the sand would fill up the estuary, which was the drainage for the pond. The pond is actually part of an estuarine system. So, if the sand came in, filled the stream bed and the pond couldn't drain, the pond level would start rising. And because it was flood plain area, then we'd be in danger, both for the neighborhood flooding, but also for our crop of fish. So, that was a lot of not just physical stress but a lot of emotional and mental stress having to deal with the environment. And, of course, we were there during Hurricane 'Iwa, which was pretty horrendous.

WN: What happened?

CW: Well, it was just incredible to watch. In fact, (when) the news stations did their filming of (the) 'Iwa aftermath, they filmed the house that (hung) over the water, because the roof (had) completely ripped off.

We were in the old plantation house that was up on the bluff. We watched (it) happen. The universe was whirling around us. My son Jason and I were sitting on the loft, looking out the window, and we saw Jim tying up the boat, you know, trying to secure it. And then we saw the roof rip off and the shed next to that house just collapsed and flew into the fish pond. The wind picked the boat out of the water and slammed it into a telephone pole and knocked (it)

down. At that time, I ran out to tell Jim he'd better come in the house, although the house was so very old that we had our doubts whether that would survive the storm. Fortunately, it did. But that winter was very heavy on us, in terms of what devastation it left around us. It didn't really impact too badly on our production. The pond itself did all right, it was just trees and a lot of debris and I think we were out of water for a week, and out of electricity for two weeks.

WN: What were your goals when you started the fish pond? Or did you have any?

CW: Several goals. One was production, because we had to make our living off of the fish pond. You know, after the second year, the fish pond was our sole source of income, so our main goal was production.

Jim had other goals. He wanted to explore aquaculture production at its core, (the) specific issues and features (that) were important in the production of aquaculture. And he saw it as a springboard for his career. That's the term he used to me when we were there and I was sometimes questioning whether we should be doing what we're doing.

His goals were different from mine. I saw the pond as a cultural treasure, and as an educational resource. As we worked with kids from Kamehameha Schools, and gave tours to young people who came to the pond, I saw an opportunity to teach Hawaiian culture (and) science. It gave many opportunities for people to learn.

WN: Besides grass along the banks, were there other problems with vegetation at all?

CW: Vegetation. Well, Lokoea is actually three ponds, and one, the one we call the middle pond, was actually connected to 'Uko'a Pond, and it was filled with bulrush. It's a waterway from 'Uko'a Pond to Lokoea Pond and out to the ocean. Sometimes it would be hard to harvest because all the fish would go into the reeds. So, it poses problems because it's an area for fish to hide. Harvesting was always a problem. We just had to constantly innovate new ways to harvest fish because fish are very intelligent. They learn your methods and then they avoid you. So we had to keep altering our methods of fishing.

WN: What kind of methods did you use for harvesting?

CW: Primarily, Jim's main method of fishing day to day was the throw net. And he estimates he caught over 10,000 pounds of fish with his throw net. We used traps, nets—gill nets. The traps caught a lot of tilapia—that ragged, old stuff that we had to throw away—and it caught Samoan crab. But after a while, they'd get used to the traps, and wouldn't enter it anymore. Gill nets would work, but after two weeks the fish would be wise to the gill nets. So, we'd have to keep shifting our methods because they'd get smart to what we were doing. It's not like the open ocean. By far, the most efficient method of fishing was the *mākāhā*, the ancient Hawaiian system for catching fish. Lokoea had a modern *mākāhā*, which was a double gate system.

WN: Put in by you folks or by who?

CW: I don't know how long ago that was put in. It was probably put in at the time of the Satos or

before the Satos. You know, [Center for] Oral History did an interview with Barbara Sato Gibson.

WN: Oh yeah, yeah.

CW: And, I think at that time they were using the double gate system.

WN: Oh, is that right?

CW: She lived at the edge of the fish pond, so we were able to talk to her and find out things about the pond from her since her father was the pond keeper.

WN: I see, I see. Double gate system meaning one gate on the outside of the wall and one gate on the inside part of the wall.

CW: (Yes), and the inner gate was a solid wooden gate. That way you could control the circulation of water, you could control the depth of the water, and when you fish with the *mākāhā*, you could raise and lower the gate to catch the fish and they'd be caught in the channel, between the two gates. And the mullet are particularly responsive to the gates during the winter, when they're spawning. They have to get to the ocean. It's sort of the reverse of salmon. Salmon have to come into freshwater streams to reproduce and live their life out in the ocean. Mullet are the other way around. They live their life in the brackish estuaries and—sometimes in the ocean—but, to reproduce, they (must) be in the pristine waters of the open ocean.

WN: So spawning season they would head out toward the *mākāhā*?

CW: (Yes).

WN: So that's when you harvest.

CW: (Yes), we could catch 700 pounds of fish at one time. I mean, more fish than we knew what to do with.

WN: I see. And then, the outer gate would be grills?

CW: (Yes), to let the ocean water in.

WN: And the small *pua* to come in?

CW: Well, we really wouldn't use the *mākāhā* to stock fish. We would catch the fish outside and put them in. That way we had control over what we put in. We wouldn't put in barracuda, *pāpio*, (and other) predator fish. We stocked, primarily, mullet from the estuary and some *āholehole*.

WN: And how did you prevent tilapia from reentering and staying in there?

CW: You can't. There's no way to get rid of tilapia because they're so (fecund). They reproduce in the pond.

WN: Because they're coming in from the other side, right? They're coming in from the stream.

CW: No, once they're in the pond, they reproduce. (They can reproduce) in salt, fresh and brackish water.

WN: No wonder there's so many tilapia, they're strong.

CW: Very fecund. And, not only that, but they do this really interesting thing, they mouth-brood their babies. The female lays the eggs in these nests. The male comes over and sprays sperm over it, then the female goes and scoops the eggs into her mouth. She rears the eggs in her mouth till they hatch, and the babies live in her mouth until they're old enough to go off and forage. So she's breathing in water all the time and the water is circulating in her mouth. When they're big enough, they don't live in her mouth anymore, they're big enough to survive. So, the tilapia have a way of nursing their young. Most fish just (are) hatched and they're on their own. The predators can get them. Not so with tilapia. So, they're very abundant.

We incorporated tilapia into our management scheme because we couldn't get rid of them. We decided you can't get rid of them, so you gotta go with them. Once the water quality was good, and the feed inputs were good, and we harvested regularly, they were a marketable fish. The ones that we found in the pond were ragged and old because they weren't fed and they weren't harvested regularly. That makes a difference. We found a good market for tilapia, and eventually, we raised red hybrid tilapia that were (well received at) the market. We got three to four dollars a pound for them.

WN: By market, what do you mean? What were your markets?

CW: Oh, we marketed fish everywhere, (primarily at) the People's Open Market. We were the first aquaculturists to use the People's Open Market as an outlet.

WN: You sold it directly yourself?

CW: Directly to the customer, which was great, because they loved it. They got fish that was very fresh. I mean, that morning the fish could be wriggling, and that afternoon, they'd be eating it. It was very good for them. It was good for us, because we got the best price. Cutting out the middleman was a very good thing.

Anything in surplus that the open market couldn't take, we'd peddle around the O'ahu Market, Downtown, or Tamashiro [Market] and other places like that. And our red hybrids (were sold to) Chinese live seafood restaurants. We'd take them live and (the restaurants) would market them live. Their customers got fish that was wriggling ten minutes ago, steamed on their plate.

WN: Were there other fish pond operators doing what you were doing at that time?

CW: George Uyemura has been doing aquaculture in Mōli'i Pond for many decades. Jim met Sus Nakagawa at a Hilo conference. At that time Sus wasn't using the *mākāhā*, he didn't know how to use it. So, Jim went over and showed him where it was and talked to him about the

theory of how it works. Up until that time they were pole fishing mullet with bread (WN chuckles). And, one day at Lokoea we got a knock on the door and we opened the door and there were Sus and Ellen, and they said the first time they used the *mākāhā*, they caught hundreds of pounds of fish. It was amazing to them after all those years of pole fishing. And they had innovated their pond further by going and studying trout culture on the Mainland, and they brought that technology back. And now they do an incredible mix of tradition and new technology. They've got trout growing in their pond. They've got cold, clear water. So, they buy the eggs and hatch the *keiki*s, nurse them out, and then grow their trout out.

WN: It's more fresh than brackish.

CW: (Yes), and what they've done further to innovate—this is several generations, I guess Sus's parents and uncle had a restaurant at the edge of the pond, so they sell the fish in the restaurant. They do such a good job on their dinners.

WN: Where is this?

CW: [The] Seaside [Restaurant], (just outside of) Hilo, in Keaukaha.

WN: Oh yeah, I heard about that.

CW: Oh, great place, and it's just gorgeous. They've done such a good job. And every time you go (there), it's better than when you went the last time.

WN: That's right, they had a newspaper article about that place.

CW: They've been written up in *Gourmet* magazine, too. Incredible, incredible job. And, you know, it's a treat to go there, because the 442nd—Sus is a [veteran of the] 442nd [Regimental Combat Team]. The guys go over there and every Wednesday they pick a project and they work on it. They'll landscape the ponds; everything is beautifully landscaped. They continuously work on the site, and it's just gorgeous. Sus has collected these rare mullet, white and gold mullet that he's got mixed in his ponds with *koi*. And everywhere there (are) tanks and bathtubs filled with baby fish. They've got a happening business.

WN: Yeah, yeah, I gotta go and visit.

CW: You can even get a mullet plate lunch (at the snack bar).

WN: Yeah?

CW: Yeah.

WN: Oh, hard to get mullet over here [on O'ahu].

CW: Yeah.

WN: Yeah.

CW: Mullet or *āholehole* or trout. They do all of it. And, it's amazing, their highest-priced fish is tilapia.

WN: Really?

CW: Yeah, their tilapia is really well known amongst the Filipinos. And they get a really good price on the tilapia.

WN: How many times would you harvest a year?

CW: Oh, (almost) every day.

WN: Oh, you harvested every day?

CW: Some days we didn't, some days we'd spend working (at other things). But every week, I'd say, three out of five days, we were harvesting.

WN: What's the size of an average harvest?

CW: It depended on the method. Because the fish were so *akamai*, sometimes you'd catch and sometimes you wouldn't. It depends whether your strategies worked or not. If you fished with the *mākāhā* in winter, guaranteed you'd have a good crop, the first three or four nights you fished. If you fished with the gill net, set it overnight, you'd get, maybe, fifty (to seventy-five) pounds. It just varied with method, and sometimes it's chance.

WN: So the winter months were the primary months for fishing and harvesting with the *mākāhā*?

CW: Oh, summer, too.

WN: Summer, too.

CW: (Because of the) high tide. Some pond operators can fish with the *mākāhā* every day. Lokoea was a *pu'uone* pond, and you can't harvest with the *mākāhā* every day because the tide doesn't go high enough. It's *pu'uone*, it's inland and you're depending on the tide being high enough to come up the stream and raise the stream level high enough so that you can fish with the tidal fluctuation. So we had to have the very highest of tides, which come in the summer and the winter.

WN: I see, so it was an inland pond.

CW: (Yes), if you have a fish pond that's on the ocean, a *kuapā*-type pond, you can fish every day with the tidal change. We just didn't have that capability. So, it was a lot of work to figure out ways to catch fish. When I talk to him about it now, (Jim) says there wasn't a single day that he didn't look at that pond and think, "How am I gonna get the fish out of the pond?"

WN: How far away was the open ocean from the *mākāhā*?

CW: Oh, let's see. Maybe thirty feet.

WN: Oh.

CW: It was a small estuary (that) opened into Hale'iwa Harbor. So, it wasn't open ocean, it's a harbor.

WN: And how many freshwater sources were there?

CW: Freshwater sources into the pond?

WN: Yeah.

CW: The *keiki* pond had about, six springs along the edges. The large pond had one large spring that came out of a cave. And that cave was the home of Laniwahine and Puhi'ula, who were the guardian spirits of the pond. And then there was another spring on the other side of the coconut grove, in the large pond.

The waterway was connected to 'Uko'a, which is a major source of water. 'Uko'a Fishpond is famous in Hawaiian lore. The water would just gush into that pond through underground sources. When I talked to Waialua Sugar [Company] people, they told me that there (are) underground rivers that upwell at 'Uko'a, the upwelling rushes down the waterway into Lokoea. The situation now is different because Waialua Sugar pumps about twelve million gallons a day out of that source. At one time, the water (would) gush through 'Uko'a, through Lokoea, and out to the stream into the ocean. Now, it's (a shallow) meander.

That's why I say it's a really fascinating place to learn. You're learning about the geography of the land, you're learning about the lore of the ancient people with their goddesses and ways of worship and how they cultured fish. You're learning about the ecosystem and science, because we harvested about twelve different species of fish and crab and sold it. There are all kinds of opportunities for learning experiences in the fish ponds.

WN: So, you were able to carve out a living off of this fish pond?

CW: (Yes), we were able to do that. It wasn't an easy living. By most people's standards, it wasn't a really decent living.

(Laughter)

CW: We could've taken it further, because there is technology, because there is methodology available that's applicable to the fish ponds. The yields could have been increased. We took it beyond (the production of) the ancient Hawaiians. We took it into semi-intensive production, growing (over a) thousand pounds per acre per year. It could've gone further up that scale, but we couldn't do it without a long-term lease. And that was the frustration of being there. We could see all this potential. We knew we could do it, because we'd tested it and had trials on all these aspects. But to take it the next jump would've taken capital inputs and a long-term situation, and we just couldn't do that.

Jim (had) other opportunities before him. His saying that Lokoea was a springboard was right, because there were other opportunities happening, and that's why he chose to move on

to [work at] Oceanic Institute. Now he's doing aquaculture on a national and international scale, which is really important work. A lot of the basic concepts he applies to his work now started at Lokoea, because he was looking at (basic issues of) production. I don't know if a lot of scientists who do research at a Ph.D. level have that commercial production basis or even understand that the bottom line is dollars—the dollars that you get from what you produce. That your living depends upon what you grow and what you're able to sell. That's a very important facet to production-type research.

WN: Plus you folks had to depend on the income from the pond.

CW: (Yes).

WN: I mean, you were hungry.

CW: Yeah, we were! And that's an important part.

WN: Instead of working in a lab, getting a salary . . .

CW: Yeah, yeah, yeah.

WN: . . . you were raising fish.

CW: Oh yeah, that was important. That was an important part of the experience. I'm grateful for (the) times, the times of being hungry, because it taught us a scrappiness, that says (that) your productivity is directly proportional to the work you put in. And that was a very, very important lesson.

We were valuing everything on that scale. We weren't thinking dollars and cents anymore when we bought things at the store. It was pounds of fish. How many pounds of fish (laughs) is this t-shirt worth? This t-shirt cost me two pounds of mullet. That's expensive. That's an expensive t-shirt. That eight-dollar t-shirt is two pounds of mullet. I don't know if we can afford that. (It's a) really different scale of valuing that most of society doesn't experience. I'm real grateful for that. Those times remind me, even now, that I have to be a very productive person.

WN: So, you did it for four years?

CW: (Yes).

WN: Until 1985?

CW: (Yes).

WN: So, what were your thoughts of leaving that?

CW: I was devastated at leaving. It was real hard for me to leave. Jim had already made the emotional break, because he had a job, he was working at Oceanic Institute, the aquaculture world had just broadened for him. It was exciting and he was getting a paycheck every two

weeks. He said, "This is amazing, every two weeks, this paycheck (just) shows up in my mail."

WN: Even if you take a vacation, it'll still come. (Laughs)

CW: He thought that was just wonderful. For me, I had the pond stocked to more than it had ever been stocked before. The pond was pumping with baby mullet and baby red tilapia. It was just full of fish. And I would stand on the porch, scatter the feed, and cry, because I knew I was going to leave them. They were like my babies.

WN: What became of the pond after that?

CW: Bishop Estate put in a caretaker, and that's how it (remains).

WN: Still productive, as a fish pond?

CW: I assume he's stocking fish and caring for it. And he does keep the grass trimmed back. I think it's home style. He probably taps on the pond when he needs fish, but I asked the Haleiwa guys, when I went out there, I asked the guys at the ice house, "Does this guy come and buy ice from you guys to ice the fish to take it to market? Is he producing?"

And they said they don't really hear anything from that pond, so I assume if the ice house guys don't hear about it, it's not happening on a commercial level.

WN: Did you ever look at beyond subsistence for your family? You know, as far as that fish pond was concerned, did you ever have greater plans?

CW: Oh yeah, every day, all our thoughts were how we're (going to) increase the pond's potential, where we could take it to. We had dreams of making it an aquaculture production center full on, with a fish hatchery. And also to have it be an education center. And we thought that it was a viable thing to have the aquaculture going and producing, and have visitors come in.

My focus was wanting to educate high school and intermediate students about science and hatchery (technology). And I wasn't adverse to having tourists, though that wasn't the focus. But, even that would've been quality tourism, because you're giving people who come a depth into the culture. The Hawaiian culture, in that context, isn't something dead, it's something that's producing for today and for the future.

So, those were our goals for the future of that site, to develop it in that way. And I still believe it's a viable option, for Lokoea and for other fish ponds to do variations on that theme.

WN: Were there Hawaiian *kūpuna* from the area who you looked to for some advice as far as, not only aquaculture, but how the pond was used?

CW: I had always hoped that we would find some people that knew the ancient lore, but unfortunately what happened after the Great Mahele was a separation of people from the land and water resources, and Hawaiians did not have power over these resources. Because the

populations were devastated by disease and there was such an upheaval during that period of time, a lot was lost.

I compare it to what's left in terms of lore of the voyaging canoes, and there's a lot of information left. The reason that information remained intact (is because) a canoe was something you could pick up and move with you. It's something that has continued because there are racing teams, and tourism (perpetuated the) canoes. Tourists would ride canoes in Waikīkī Beach. And so the traditional knowledge and information about the canoes have continued, whereas with fish ponds, I think, the *kūpuna* that knew about them died off with the pond keepers and the *konohiki*s of long ago.

I had always hoped that when we went to Moloka'i, I would find someone, but, you know, the Moloka'i ponds have not been actively producing. So, when it came to learning about production aspects of fish ponds, Moloka'i people looked to Jim and to me for the information on how to operate the *mākāhā* and how to grow fish. And that's how we began working on fish ponds on Moloka'i.

WN: Okay, let me turn the tape over and then we'll get into Moloka'i.

END OF SIDE ONE

SIDE TWO

WN: Okay, well, sometime in, what, '87, you were approached by people on Moloka'i?

CW: Well, as early as '81–'82, Walter Ritte came to Lokoea and wanted to learn about (our work). He had a dream that the fish ponds of Moloka'i would be productive once more and he wanted to learn how (and) what we did. George Peabody, who was (leasing) 'Ualapu'e Fishpond, came to visit us and learned what we were doing. And, in 1984, Colette Machado, who was the director of the Hawaiian Academy of Knowledge, asked us to come over to Moloka'i and work with the kids on their fish pond project. She felt that it was important for them to learn about the works of fish ponds from someone who was actually doing it.

So, our relationship with Moloka'i people and fish ponds began in the early eighties, and it was a tremendous experience, working at Keawa Nui, with the Hawaiian Academy of Knowledge. There was just so much going on there. Adolph Helm was working on agriculture. Keoni Fairbanks was teaching Hawaiian studies. Coreen Helm was teaching language arts. It was a really exciting time. There was a lot happening there and the kids were just flourishing. These kids were supposed to be alienated youth and, you know, getting them out and working outdoors on land, working with the earth and working with the water, I think, was a tremendous experience for them. I've met some of these kids later, at later times, and it's amazing to me that they remember me—but I remember them. It was just a wonderful experience for all of us, doing that work. So, that further solidified my ideas that the fish ponds are important educational resources.

WN: Were you aware of all the fish ponds that were, you know, on Moloka'i?

CW: Well, I had heard about the fish ponds on Moloka'i, and I had seen them in the seventies, when I drove along the southeast shore. But, after working a fish pond, I looked at Moloka'i with new eyes. And the fish pond resources—when we saw them in 1984—were just astounding to me. Just fish pond after fish pond ringing that shore of the island. You know, Jim and I were both amazed at what potential these ponds had for growing food.

WN: So, how did you first get actively involved in Moloka'i and fish ponds?

CW: Well, it was with Keawa Nui and then, three years ago, Walter Ritte contacted me again. This time he was operating as the economic development coordinator for the island, for DBED [Department of Business and Economic Development], and he wanted to get 'Ualapu'e started, because George Peabody had relinquished his lease on the pond and it was vacant. I had some understanding of that pond, I had seen it when George was there, I had visited. I knew it had a lot of potential. And I told Walter it was an ideal site to start off. So, we began going through the processes of getting that in motion.

WN: In what capacity did you serve?

CW: I was consultant to the project and (did) whatever needed to be done. I did (chuckles) whatever it took to make that happen. Walter did a lot on his end to make that happen. You know, it's a complex thing. Part of it was, who was going to lease this pond. At first, we had thought maybe DBED would lease the pond and get it going as their project, and that proved (impractical). Bureaucratically that didn't work. So then we had to look at the concept of a non-profit organization running that pond.

Walter gathered together individuals in the community that were interested and that were community-minded and were able to give their efforts to the works. And he gathered together an incredible group of people, a good cross-section of that community, people that are very civic-minded and community-minded and care about the future of the island, to develop the Hui o Kuapā. So, that's how that non-profit started, and they developed their by-laws and became a non-profit and leased the fish pond, and we went through the permit process. So, that took about two years.

WN: Now, were you familiar with the permit process prior to this?

CW: Well, we had done some permits for Lokoea. Of course, there are some variations because 'Ualapu'e falls under the jurisdiction of Maui County, and they have their prerequisites. It also was zoned conservation, which has other problems. Lokoea is zoned ag [agricultural]. Conservation (zoning brings) problems. If something is zoned conservation (and) if you want it to be commercial, you (must) go through public hearing. And, really, if the fish ponds are going to be a commercial entity, they might take a look at rezoning it from conservation to ag. You know, it seems appropriate, if you want them to produce.

WN: It seems to me another problem was that 'Ualapu'e was deemed an historic site.

CW: That's sort of a double-edged sword. It's good that (places) are deemed historic sites for preservation, but preserving doesn't mean that (places) will (be) maintained, and we had to go through their processes to get permission to fix the holes in the wall, to replace rock. So, it's

a double-edged sword. I have regard for what the Historic [Preservation Division Office of the State Department of Land and Natural Resources] does, so I can't complain. I'm glad they're there in many ways.

WN: How about the federal government? What had to be done with them?

CW: We had to go through their process. I wrote an environmental assessment of the area, provided them information and data that we collected about the fish pond. We measured the depth, the salinity, low tide, high tide, studied the siltation, did sampling of what kinds of fish were in the pond. I wrote up a description of the pond itself. (For) the measuring, we were fortunate to get the help of MOP, Marine Options Program, at Sea Grant [University of Hawai'i], and that was very helpful. And so I wrote up an environmental assessment based on (the data) and handed it in with their application, and asked them to approve our works there, and they did.

WN: Okay. Structurally, or physically, how would you compare 'Ualapu'e with Lokoea?

CW: Well, they're different types of ponds. Lokoea is an inland pond, *pu'uone*. *Pu'uone* means sand dune or sand heap, so that it's sort of located behind a sand heap, and there's a channel connecting it to the ocean, a saltwater channel, called an *'auwai kai*, that connects the pond to the ocean. Lokoea is essentially part of an estuarine system. It's part of the river system. 'Ualapu'e is a *kuapā*-type pond, and what that is, essentially, is a long rock wall that is forming sort of like a lei around part of the ocean. It's embracing a portion of the ocean and capturing it, you know, attaching it to the land, forming a brand-new resource.

WN: So, I would imagine that the *kuapā*-type pond would have higher salinity than, say, the type of pond that you had.

CW: Yes. But then, you know, there are springs in these [*kuapā*-type] fish ponds, so the salinity would vary in accordance to the flow rate of the springs and what kind of water is gushing out through the springs.

WN: Okay. I was looking over your strategic plan that you put together, along with Hui o Kuapā, for the fish pond.

CW: Uh huh.

WN: And you broke it up into four phases. I was wondering if we can go over each of these phases.

CW: Sure.

WN: First one was the cultural phase. Can you talk about that?

CW: Well, fish ponds are living cultural treasures. I see them as important springboards for education, because they give us the opportunity to explore the way Hawaiians used the land and water. They're multi-faceted experiences, because there's things going on in the fish pond, in the ecosystem, and Hawaiians were very knowledgeable about fish and fish behavior

and fish growth. That's evidenced by all the many words they had for fish. They had seven different classifications for mullet, which is more sophisticated than the fisheries (terminology) today.

So, you learn a lot about the ecosystem and how the Hawaiians saw it. You learn about how they set up their food-production system which (is) pretty interesting when you think about (the) mountain to ocean (land divisions), (the) *ahupua'a*, and how it was designed, planned, and developed. They had rudimentary materials, essentially rock, mud, and timber. And yet, they developed an elegant system of food production, that ended at the ocean with the *kuapā* ponds. There were four types of fish ponds (on the *ahupua'a*). So, you can see a lot of that through the eyes of the fish pond, if you explore it deeply.

Then, there's the culture of how they related—the relationship of man, god, and nature. Everything the Hawaiians did was intertwined with their relationship with the gods and their relationship with nature. There was a strong reverence towards nature. This resulted in conservation practices in use of land and water resources, disaster planning, in terms of how they planted taro, wild cuttings of taro, along their streams, so there was, in time of starvation, something to tap upon. Those resources were not used without being replaced. When you look at their ocean management (and) fishing, certain areas were *kapu* at certain times of the year. Certain fish were *kapu* at certain times of the year. And fish were *kapu* during their spawning season, like the mullet.

These lessons are very important today. Because they had a long-term concept of resource use. We have had a short-term, consumer attitude towards our resources, and we use our resources as if they (will) always be there. Hawaiians knew that resources were limited, because they went through periods of starvation and they had to be very careful how they used their food resources, because they were on islands. Compare them to other primitive cultures that were hunting and gathering, they could exploit an area and move on. (Besides) hunting and gathering, (there was) slash-and-burn agriculture (that) depleted the resources. Whereas, (for) the Hawaiians, (if they) depleted (their) resources, there (was) nothing—where do you go? You're living on an island, maybe you'd have to move to another island, or starve.

WN: Talking about the *ahupua'a* concept, you know, where the Hawaiians took care of the land from the mountain to the ocean. And, for example, if somebody does some activity that poisons the stream, it's gonna affect everybody down the line. You know, for example, talking care of the *lo'i* up on the *mauka* area. If you do that, then you'll also take care of the fish pond, because the water from the *lo'i* is going to become part of the water of the fish pond. You know, that kind of thinking, is that on the boards for this project, here?

CW: Yes, that's why we developed a master plan for the 'Ualapu'e *ahupua'a*.

WN: Not just the fish pond, the whole *ahupua'a*?

CW: Specifically for that reason, we were at the fish pond and we were looking upland, and we saw that there was land being graded on the slopes, to grow grass for cattle. And the graded land was at a very steep slope and when it rained, that dirt began washing into the pond. And we could see all kinds of future potential disasters there. If pesticide ag went on the upland

portions, all that pesticide would wash into the pond, we could have massive fish kills. So, we really saw that there was a need to look at things comprehensively, and plan comprehensively. So that the whole *ahupua'a* could be used consciously and productively, which is like the ancient Hawaiians.

They say that the Hawaiians were always conscious about the (person) downstream. (They) didn't take too much water, so that there was always water enough for the person downstream. *Kānāwai* is the word for law, and *kānāwai* (means) pertaining to water. So, the early laws of the Hawaiians were water laws. If someone was caught breaking a dam, they'd be killed and their body would be stuffed in the hole that they left. They took it seriously. If a family or a farm group that had *lo'i* didn't work on the clearing of the *auwai*, or the building of the *auwai*, they lost their water rights. So everybody pitched in and worked. No work, no water.

There were reasons to work hard as a group. It affected your productivity. And, eventually it affects your land rights. If you don't work on the *auwai* and provide labors, then you don't get water. If you don't get water, you don't grow food. If you don't grow food, you're likely to lose your land rights.

WN: Unfortunately, today, with private property, the emphasis on private property, I mean, you know, one guy would own the land up *mauka* and another guy would own the land down *makai*. And, without regard for each other, you know, seems to me that if there is a long-term survivability of this fish pond aquaculture industry, that that kind of thinking is going to have to develop.

CW: There (should) be communication and conscious thinking of consequences. Our society doesn't place emphasis on long range. It's, "Grab what you can now and don't worry about the consequences." We're reaping all the aftermath of that kind of thought, worldwide. So, we do have to change the way we think and use land and water. I think fish pond and the *ahupua'a* concept is a good way to teach that. Not only to people within our state, but I think the world should be looking at these concepts.

You know, native Indians used conservation practices, but I don't think they were as sophisticated as the Hawaiians, because the Hawaiians had to do it on such a limited land base. I might be egocentric because I'm in Hawai'i, (but) look at the scope of concepts we can teach. (We can) take (these concepts) one step further from just learning about it, to doing, planning, on that comprehensive level. That's what the *ahupua'a* concept is about. That master plan for 'Ualapu'e is about taking it to action.

WN: Do you think that—is there a potential? Do you see that something, that kind of thinking happening on Moloka'i?

CW: There's (tremendous) potential.

WN: Would it be easier to do it on Moloka'i than, say, here on O'ahu?

CW: (On) O'ahu, the only place you can (plan an entire *ahupua'a*) is Kahana. (It's) the only *ahupua'a* that (has abundant) water and (that's) relatively pristine. In Wai'anae, they're doing

good works. I haven't seen what the community is doing out there, but (I hear that) they're doing some really good works in agriculture and aquaculture there. But on a massive scale, you need land base and Moloka'i certainly has untapped resources. The Big Island, also (has potential). And, you don't have to look at it that all the works have to be traditional. Hawaiians were (traditionally) innovators. The fact that they developed aquaculture says that. So, you can (continue to) innovate, you can change. I think the underlying basic concepts (must be for) long-range planning, conscious use of resources and the basic concept of *mālama*, caring for the land and water. If those practices are put into place, I think we're doing our job.

WN: Okay, the second phase of your strategic plan was the commercial aspect of it. What are the plans for that? For 'Ualapu'e.

CW: For 'Ualapu'e, the idea is that the fish pond be a model site for fish pond production and a training center. Because aquaculture is not something that is prevalent at the fish ponds, people of the island have to learn what it's like to raise fish and integrate that with some modern technology (for) raising fish. So, this project at 'Ualapu'e is seen as the model site where things can start happening. Once the aquaculture (production) is moving along nicely (at 'Ualapu'e, there will) be opportunity to train people and share the information and get the other fish ponds going.

WN: But it's also important that this fish pond be viable, commercially.

CW: Yes, yes. That's the whole focus. It (must) produce. And the potential to produce is there. There's no doubt in my mind that ('Ualapu'e) Fishpond can produce fish (at commercially viable levels). Thousands of pounds of fish. They need to get the fry. That's why there's a plan for a hatchery now. The hatchery technology is (well developed). Oceanic Institute has worked out the hatchery and the larval rearing, now it has to go the next phase into production.

WN: I think it's a good time to talk about culture and tradition and modern technology. I mean, there has to be a cooperation between the two, right?

CW: Yes, yes.

WN: Are there critics who say that there's too much technology, maybe they should be more paying attention to the way ancient Hawaiians did it?

CW: Yeah, I've heard people say that, you know, but in terms of fish ponds, I haven't had anybody come up to me and tell me that the things I'm saying are wrong. In some ways, I think Hawaiians are very practical people. The basic concept of *mālama* is what's important, caring for the land and water. When I talk to Hawaiians about other technologies being used in fish ponds, I don't (have) disagreement.

WN: For example, you know, a hatchery, for example, to hatch the *pua* and raising them until they're hardy enough to be put into the pond is more of a modern technology? Is that correct?

CW: (Yes), that's high tech, you know.

WN: And you compare it to, say, the *mākāhā*, with the grill and then having the fingerlings go through the grill and then they grow too big so that they can't go through again, which seems to be the more traditional route. So, if . . .

CW: Well, two factors play into part there. There aren't many fingerlings in the wilds anymore. Our fish stock is depleted. At one time, you had a lot of *pua* available and you could catch them and put them in the ponds and there was no problem, you had enough fish. But, the other thing is ancient Hawaiians did not have to produce at a high level. They weren't commercial. They tapped a pond as needed.

For any business to survive economically (today, it must) be production-oriented at semi-intensive levels. Extensive-style production, the way the ancient Hawaiians did it, is not going to survive in modern economy. I don't believe that our goal is (to) be (constantly) subsidized by the government. I believe we should do this and become something that's commercially independent and viable.

(I don't agree with) subsistence economy either. I don't believe that people should be stuck at a hand-to-mouth existence, (as) we were at Lokoea. I think that people can make a decent living off of fish-pond aquaculture. It's totally possible and it happens in other parts of the world. In the Philippines (and Taiwan), they do semi-intensive culture in coastal zone ponds. They have high yields, with the same type of fish, mullet and milkfish, so it's being done.

WN: So you're going beyond the cottage stage.

CW: Cottage industry does not have to mean, does not have to be equal to . . .

WN: Subsistence.

CW: It can be a medium-range economic business. Like small business in Hawai'i.

WN: When you say training ground—oh, I'm sure obviously it would mean training ground for the technological aspect of it.

CW: (Yes).

WN: What about in terms of the permit process? I'm sure that's what keeps some people away from getting into this kind of thing.

CW: (Yes), the permit process is a tangle of red tape.

WN: Well, wouldn't it be great to get some kind of a booklet out, to Moloka'i residents to say, "This is what you gotta do first."

CW: Well, I've detailed all of that in the master plan, all the permits that are needed. But even that isn't enough. (When) the governor was at the ('Ualapu'e) Fishpond blessing, he stated two things. He said he will be assigning a task force to the job of streamlining the permit process. He said that he was making a commitment to getting the fish ponds of Moloka'i actively used again. So, I think those are very positive signs for the future. But those aren't small tasks,

those are very big, big jobs. So, we'll see. (Chuckles)

WN: Okay, the third phase was resource management.

CW: (Operating) a fish pond is resource management, because you're juggling all these different factors. You're juggling in the factors of production. What are your inputs? How much seed are you putting in? How much are you feeding those fingerlings? Are you fertilizing? What is your management scheme to this resource? How are you developing that management scheme? And, you know, are you creating the best and healthy environment for the fish? How is that done? Under what circumstances do the fish grow at their very best? (Resource management involves) those kinds of issues.

At each pond, there's some variation to (these issues). Certainly the tasks are similar, but each pond is a (unique) resource, and you would approach things a little bit different. Things like, are you getting enough water circulation? Are you depleted in oxygen? Are you feeding enough? Are you understocked in fish? Those are questions that the pond manager has to look at and answer. In a pond with high water circulation, lots of springs, then you can stock in higher densities of fish. In a pond (with low) circulation, you might want to (use) paddle wheels. How are you dealing with the silt? And how are you dealing with the upland management? All these factors are part of the resource management aspect.

WN: Big job.

CW: The person who successfully runs an aquaculture business is doing two very difficult things. Business management of a small business is no easy feat. Juggling all the factors that make for a good biology, good production, that's important, too. And there's so many different factors. If you're running a hatchery, there are many things to be conscious of. Do you have good circulation in your hatchery? Are you feeding your fish the right food? And are you producing enough hatchlings to go into the pond? Are you nursing them out to the right size when you throw them in the pond so they're not getting eaten up? Because there is always predators in the pond. Are you taking all the predators out of the pond that you can? Many, many questions and so, it's not an easy thing. Aquaculture is as difficult as farming, but it's got the added dimension of depth to the water. How do you know your crop? How do you make a crop assessment? How do you know how many pounds of marketable fish you have in the pond? There's a lot of things that come into play when you're running a business.

WN: What about strategy for marketing for 'Ualapu'e?

CW: I'm not familiar with the Moloka'i market. I would think that (it's) very similar to the fisheries industry. So, I think that for marketing they should do some research on what's happening in the fisheries industry.

One factor that really affects the price of fish is quality control and proper processing. A lot of fishermen in the past have not paid a lot of attention to properly icing the fish. And not properly icing the fish means that you have a poorer quality product and that means that you don't get a high price. Jim and I learned to ice fish from Guy Tamashiro, we learned from the pro. He knows what high-quality fish are worth, so he really showed us how to take the best care of the fish. I'm very grateful to Guy, because we maintained a high quality in our

processing, so we always had good price. You might not want to spend the money on ice, but really, if you spend the money on the ice and do it right, it (will) bring back a higher return.

WN: Okay, and the final, the fourth, phase of the strategic plan was education.

CW: Well, we've talked about that in terms of what potential fish ponds have for education, and I think, also, those factors bear into account when we think of the future of our young people. They're saying that we don't have (avenues) in our school systems to teach math and science. I think the fish ponds are perfect for those kinds of experiences. At Keawa Nui, the kids were measuring the fish every week, in growth rate, and charting it on graphs. That's a real way to learn about math. It makes something abstract tangible. They're learning about science and life cycles (in nature). And learning these things at a teenage year, gives them the opportunity to (want to) develop other technical skills for their futures so that they're inspired to get trained and learn how to be aquaculturists. If there are fish ponds operating, (they will) need people to work at them and I think it's a perfect combination of activities. It supports an industry that is conscious of the environment.

WN: Okay, well, you know, I've talked to Tubz Kalipi and Billy Kalipi, so they've explained to me what they were doing in terms of feed and fixing the wall and the predators and so forth, so I have a pretty good idea on that. What is going to be your role in the future, you think? In terms of fish ponds on Moloka'i?

CW: Oh, that's hard to say. I don't know. I'll always be interested in how things are progressing. My attitude towards Moloka'i has been that I go there when I'm invited and when I'm asked to participate, and that's worked really well. I want to see their resources used (properly for the community). That's a dream I have for that island, that Moloka'i people will be raising fish in Moloka'i fish ponds and that there will be a (a fish pond) industry there. It's a good alternative to what's happening on O'ahu. We don't need every island to be built up and used for tourism. And they can have some tourism mixed in with it. My mind and heart are fixed on good hopes for those fish ponds (of Moloka'i). I don't know how that will manifest in work, but I hope to continue being connected to those projects in the future.

WN: Do you think you ever want to manage a fish pond again?

CW: No. (Laughs) I feel that I did it while I was young and hardy enough, but really, the physical labors of hauling and carrying and—I don't mind doing those things once in a while, I think it's good for the soul to get out and sweat and do labor, but that's not what I see my future in. I spent enough years as a beast of burden, first with hauling fish and being a fishmonger and at Friends of the Library, I was doing the book sale and hauling boxes of books.

WN: Time to take a break?

CW: Yeah, I'd like to not haul things around.

WN: So, what are you doing right now?

CW: I'm working on the interpretive plan for Huilua Fishpond, for Kahana State Park. (I'm) developing the educational materials so that the visitors at that park can have a deep and rich

experience about fish ponds.

WN: Is that fish pond being run commercially?

CW: If it is (to be) commercial, (that's) a long way down the road, because that fish pond needs a lot of work to get it operable. Right now, we're talking that it'll be used interpretively. But the people of the valley have said they want to see it producing again. To manifest that, it'll take a lot of sweat and labor. So, it depends (upon the) champions that will take on the cause (chuckles) to make that happen.

WN: Okay, well that's all I have. Do you have anything more you want to say?

CW: Not really, I think we've covered a lot of ground.

WN: Okay, thank you.

END OF INTERVIEW

'UALAPU'E, MOLOKA'I

Oral Histories from the East End

Volume I

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